

being tested. Pneumatic tests may be made with the refrigerant in the system or if the refrigerant has been removed, oil-pumped dry nitrogen or bone dry carbon dioxide with a detectable amount of the refrigerant added, should be used as a testing medium. (Carbon dioxide should not be used to leak test an ammonia system.) In no case should air, oxygen, any flammable gas or any flammable mixture of gases be used for testing.

Subpart 58.25—Steering Gear

SOURCE: CGD 83-043, 60 FR 24776, May 10, 1995, unless otherwise noted

§ 58.25-1 Applicability.

(a) Except as specified otherwise, this subpart applies to—

(1) Each vessel or installation of steering gear contracted for on or after June 9, 1995; and

(2) Each vessel on an international voyage with an installation of steering gear contracted for on or after September 1, 1984.

(b) Each vessel not on an international voyage with an installation of steering gear contracted for before June 9, 1995, and each vessel on an international voyage with such an installation contracted for before September 1, 1984, may meet either the requirements of this subpart or those in effect on the date of the installation.

§ 58.25-5 General.

(a) Definitions.

Ancillary steering equipment means steering equipment, other than the required control systems and power actuating systems, that either is not required, such as automatic pilot or non-followup control from the pilothouse, or is necessary to perform a specific required function, such as the automatic detection and isolation of a defective section of a tanker's hydraulic steering gear.

Auxiliary steering gear means the equipment, other than any part of the main steering gear, necessary to steer the vessel in case of failure of the main steering gear, not including a tiller, quadrant, or other component serving the same purpose. Control system means the equipment by which orders

for rudder movement are transmitted from the pilothouse to the steering-gear power units. A control system for steering gear includes, but is not limited to, one or more—

- (1) Transmitters;
- (2) Receivers;
- (3) Feedback devices;
- (4) Hydraulic servo-control pumps, with associated motors and motor controllers;
- (5) Differential units, hunting gear, and similar devices;
- (6) All gearing, piping, shafting, cables, circuitry, and ancillary devices for controlling the output of power units; and
- (7) Means of bringing steering-gear power units into operation.

Fast-acting valve, as used in this subpart, means a ball, plug, spool, or similar valve with a handle connected for quick manual operation.

Followup control means closed-loop (feedback) control that relates the position of the helm to a specific rudder angle by transmitting the helm-angle order to the power actuating system and, by means of feedback, automatically stopping the rudder when the angle selected by the helm is reached.

Main steering gear means the machinery, including power actuating systems, and the means of applying torque to the rudder stock, such as a tiller or quadrant, necessary for moving the rudder to steer the vessel in normal service.

Maximum ahead service speed means the greatest speed that a vessel is designed to maintain in service at sea at the deepest loadline draft.

Maximum astern speed means the speed that it is estimated the vessel can attain at the maximum designed power astern at the deepest loadline draft.

Power actuating system means the hydraulic equipment for applying torque to the rudder stock. It includes, but is not limited to—

- (1) Rudder actuators;
- (2) Steering-gear power units; and
- (3) Pipes, valves, fittings, linkages, and cables for transmitting power from the power unit or units to the rudder actuator or actuators.

Speedily regained, as used in this subpart, refers to the time it takes one

qualified crewmember, after arriving in the steering-gear compartment, and without the use of tools, to respond to a failure of the steering gear and take the necessary corrective action.

Steering capability means steering equivalent to that required of auxiliary steering gear by § 58.25–10(c)(2).

Steering gear means the machinery, including power actuating systems, control systems, and ancillary equipment, necessary for moving the rudder to steer the vessel.

Steering-gear power unit means:

(1) In the case of electric steering gear, an electric motor and its associated electrical equipment, including motor controller, disconnect switch, and feeder circuit.

(2) In the case of an electro-hydraulic steering gear, an electric motor, connected pump, and associated electrical equipment such as the motor controller, disconnect switch, and feeder circuit.

(3) In the case of hydraulic steering gear, the pump and its prime mover.

Tank vessel, as used in this subpart, means a self-propelled vessel, including a chemical tanker or a gas carrier, defined either as a tanker by 46 U.S.C. 2101(38) or as a tank vessel by 46 U.S.C. 2101(39).

(b) Unless it otherwise complies with this subpart, each self-propelled vessel must be provided with a main steering gear and an auxiliary steering gear. These gear must be arranged so that—

(1) The failure of one will not render the other inoperative; and

(2) Transfer from the main to the auxiliary can be effected quickly.

(c) Each substantial replacement of steering-gear components or reconfiguration of steering-gear arrangements on an existing vessel must comply with the requirements of this subpart for new installations to the satisfaction of the cognizant Officer in Charge, Marine Inspection.

(d) Each non-pressure-containing steering-gear component and each rudder stock must be of sound and reliable construction, meet the minimum material requirements of § 58.25–75, and be designed to standards at least equal to those established by the American Bureau of Shipping or other recognized classification society.

(e) The suitability of any essential steering-gear component not duplicated must be specifically approved by the Commanding Officer, Marine Safety Center. Where a steering-gear component is shared by—

(1) A control system (e.g., a control-system transfer switch located in the steering-gear compartment);

(2) The main and auxiliary steering gear (e.g., an isolation valve); or

(3) A power actuating system and its control system (e.g., a directional control valve)—the requirements for both systems apply, to provide the safest and most reliable arrangement.

(f) Steering gear must be separate and independent of all other shipboard systems, except—

(1) Electrical switchboards from which they are powered;

(2) Automatic pilots and similar navigational equipment; and

(3) Propulsion machinery for an integrated system of propulsion and steering.

(g) Except on a vessel with an integrated system of propulsion and steering, no thruster may count as part of a vessel's required steering capability.

(h) Except for a tank vessel subject to § 58.25–85(e), each oceangoing vessel required to have power-operated steering gear must be provided with arrangements for steadying the rudder both in an emergency and during a shift from one steering gear to another. On hydraulic steering gear, a suitable arrangement of stop valves in the main piping is an acceptable means of steadying the rudder.

(i) General arrangement plans for the main and auxiliary steering gear and their piping must be submitted for approval in accordance with subpart 50.20 of this subchapter.

§ 58.25–10 Main and auxiliary steering gear.

(a) Power-operated main and auxiliary steering gear must be separate systems that are independent throughout their length. Other systems and arrangements of steering gear will be acceptable if the Commanding Officer, Marine Safety Center, determines that they comply with, or exceed the requirements of, this subpart.